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# *The* ILLINOIS ENGINEER

## ILLINOIS SOCIETY OF PROFESSIONAL ENGINEERS

INCORPORATED

Affiliated with the National Society of Professional Engineers  
631 East Green Street Champaign, Illinois



VOLUME XXX, NO. 6

SUMMER ISSUE

JUNE, 1954

### THE ILLINOIS ENGINEER—THIS MONTH

#### Summer Issues

*In accordance with established practice, the ILLINOIS ENGINEER will be published as a "self cover" magazine during the months of June, July, August, and September. The purpose of this is a matter of economy, to keep the total cost of the publication within the amount allotted to it in the Society's budget.*

*The pages of the magazine during these four months will be devoted primarily to society business and to current news of the profession both in and out of the Society. As usual these pages continue to be open to material submitted by society members.*

W. A. OLIVER, Editor

### COST OF LIVING INDEX

Beginning with this issue, the cost of living correction factor to be applied to the I. S. P. E. Schedule of Minimum Fees and Salaries will be based upon the Consumer Price Index of the 1947-49 average as determined by the Bureau of Labor Statistics. This change is brought about by the issuance of a new schedule by the Fees and Salaries Committee. (See article by P. E. Roberts in this issue.) On the 1947-49 base the correction factor for April, 1954 is 114.6.

For those who are still using the old schedule the correction factor is 191.6 based upon the 1935-39 average.

### LET'S RETURN TO THE THREE R'S

"One insidious influence on both the quality and quantity of engineers, the full impact of which is scarcely yet being felt, is the general drift in public schools away from mathematics and science towards the so-called social studies. The mental discipline of the three R's has been thrown overboard in favor of "happy, well-adjusted children." As you can recall from your own school days, not many children derive joy from pursuing the logic of Euclid, yet the study of mathematics is the foundation of all engineering. And if that foundation is faulty or lacking, what will become of the superstructure? Under existing educational methods we must be prepared to lower our standards to accept the socially-adjusted products of a 'happy,' but intellectually-empty, childhood and also we must be prepared for a really serious shortage of engineers."

MAJOR GENERAL S. D. STURGIS, Jr.  
in *American Engineer*

### REVISIONS TO FEES AND SALARIES SCHEDULE

(Prepared by EXECUTIVE SECRETARY ROBERTS)

The following are the changes which have been made in the "Fees and Salaries" schedule. If you will cut out this section and use it with your present copy of the "Fees and Salaries" schedule your book will be up to date.

A limited number of copies of the Third Edition of the "Fees and Salaries" schedule are available to members upon request. The first copy to Illinois Society members is free, however; the charge for additional copies is \$1.00 each or \$10.00 per dozen.

#### PREAMBLE—Paragraph 5

1. As stated in the present book: The U. S. Department of Labor publishes a monthly magazine entitled *Monthly Labor Review* in which there is a chapter headed "Cost of Living and Retail Prices." Therein is found a table, "Indexes and Percentage Changes in Cost of Living in Large Cities Combined, for Special Periods, by Groups of Items." The all-items index has a base of 100 based on averages over 1935-39.

As stated in the revised edition: The U. S. Department of Labor publishes a monthly "Consumer-Price-Index." The all-items index has a base of 100 based on averages over 1947-49.

#### SECTION 1—Division A—Sub Section 4—(Paragraph 2)

2. As stated in the present book: Paving, sidewalks, heavy grading and extensions of water and communication or electric lines for local service shall be subject to a reduction of one per cent from the above Basic Engineering Fees. These reduced basic engineering fees shall include resident supervision, but do not include inspection for the various classes of work specified in this paragraph.

As stated in the revised edition: Paving, sidewalks, heavy grading and extensions of water and communication or electric lines for local service shall be subject to a reduction of one per cent from the above Basic Engineering Fees.

#### SECTION 1—Division A—Sub-Section 12

3. As stated in the present book: Violation. Non-compliance with the terms of this schedule will be considered as unethical practice by the Illinois Society of Professional Engineers, Inc.

As stated in the revised edition: (The paragraph is completely eliminated.)

#### SECTION 2—Division B—Sub Section 12

4. As stated in the present book: Non-compliance with the terms of these schedules will be considered unethical by the Illinois Society of Professional Engineers, Inc.

#### SUBSCRIPTION RATES

\$2.00 per year in advance to members of the Illinois Society of Professional Engineers. \$4.00 per year in advance to non-members in U.S.A. and possessions, Canada, and Mexico. Foreign \$6.00. Single copies 40c.

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As stated in the revised edition: (The paragraph is completely eliminated.)

SECTION 4—Division C—(Foreword) Paragraph 4

5. As stated in the present book: The salaries as prescribed are established as "minimum" for Engineers within the State of Illinois, after having been adjusted in accordance with the preamble of this schedule for the several grades of employment, as follows:

SUB-PROFESSIONAL		
Grade A .....	\$ 1,600	to \$ 2,000
PROFESSIONAL		
Grade 1 .....	\$ 2,000	to \$ 2,600
Grade 2 .....	2,600	to 3,200
P. E. 3 .....	3,200	to 3,900
P. E. 4 .....	3,900	to 4,500
P. E. 5 .....	4,500	to 5,300
P. E. 6 .....	5,300	to 6,000
P. E. 7 .....	6,000	to 7,500
P. E. 8 .....	7,500	to 10,000
P. E. 9 .....	10,000	up

As stated in the revised edition: The salaries as recommended are established as "minimum" for Engineers within the State of Illinois, after having been adjusted in accordance with the preamble of this schedule for the several grades of employment, as follows:

SUB-PROFESSIONAL		
Grade A .....	\$ 2,720	
PROFESSIONAL		
Grade 1 .....	\$ 3,400	
Grade 2 .....	4,425	
Grade 3 .....	5,450	
Grade 4 .....	6,640	
Grade 5 .....	7,660	
Grade 6 .....	9,025	
Grade 7 .....	10,200	
Grade 8 .....	12,770	
Grade 9 .....	17,025	

SECTION 4—Group A—Grade 9 (Second Paragraph)

6. As stated in the present book: Requirements: Education equivalent to graduation from an engineering school approved by the Engineer's Council for Professional Development, supplemented by cultural, economic and social studies, plus about 15 years of broad professional and business experience, and be a registered professional engineer, under the Illinois\* Engineering Act of July 20, 1945, and a Licensed Structural Engineer in the State of Illinois.

As stated in the revised edition: Requirements: Education equivalent to graduation from an engineering school approved by the Engineer's Council for Professional Development, supplemented by cultural, economic and social studies, plus about fifteen years of broad professional and business experience, and be a registered professional engineer under the Illinois Professional Engineering Act of July 20, 1945, and a Licensed Structural Engineer in the State of Illinois.

\* Professional Engineering Act of July 20, 1945, and a Licensed Structural Engineer in the State of Illinois.

## ST. CLAIR AND ROCK RIVER CHAPTERS RING THE BELL IN MEMBERSHIP CAMPAIGN

Congratulations to St. Clair Chapter for leading the recent membership drive in percentage of membership gain and congratulations to Rock River Chapter for leading the drive as to number of members gained and for gaining second place in the percentage column.

Past President Raymond G. Brichler has offered prizes to the winners of the Three-by-One membership campaign which started this past November 20th and closed March 20th of this year. By virtue of taking first place on a percentage basis, St. Clair will be awarded a speakers' podium at their June 16th "Junior Night" meeting, while Rock River Chapter has been presented, at the recent Board of Direction meeting, a 42-inch by 72-inch cloth banner with the name of their chapter and the names of the State and National Societies inscribed thereon.

The membership campaign seems to have produced a resounding barrage of new applications well over the deadline of March 20th. Between the closing date of the campaign and May 7th, 17 additional members have been voted upon and accepted. Of this number, St. Clair has contributed an additional five. If this surge of incoming members can be maintained, we should easily top the 2,000 mark during the year.

The increases in percentage and order of standing for the membership campaign of the top six is as follows: St. Clair—17.6%; Rock River—17.0%; Peoriarea—11.1%; Rockford—10.0%; Madison—7.6%; West Central—6.5%. It is interesting to note that, at the close of the campaign, Rock River led in number with 16 new members, followed closely by St. Clair with 15. Incidentally, that has placed both chapters over the 100 membership mark. Rockford and Chicago have both tallied 12 members each. Capital has produced 9 with Peoriarea coming through with 6.

From all indications, the membership count is expected to rise drastically during the year. President Klassen has selected Lyle B. Porter of Rockford Chapter to lead the membership committee, and enthusiasm is well set for the turn of events.

Credit for the success of the campaign is due to the individual efforts of the members in mailing copies of the ILLINOIS ENGINEER to prospective members and for their efforts in following through and explaining our grass-roots organization to them. It was the enthusiasm and work of the past membership committee, headed by Earl W. Markwardt of St. Clair, and Karl C. Hoeglund of Chicago, that has played an important part in the drive. A JOB WELL DONE! Let's keep it moving!

## LAKE COUNTY HOLDS DISCUSSION ON PARKING

(Reported by FRANK J. FURLAN, JR.)

On Wednesday, April 21st, Lake County Chapter held a meeting discussing the parking problems of the Waukegan shopping district. R. M. Brown, Assistant Superintendent, Lake County Highway Department, was moderator. The panel was made up of Dick Van Gorp, Chief Engineer, Chicago Department of Public Works; H. T. Bleck, Consultant to Waukegan Parking Commission; J. T. Davis, Chairman, Waukegan Off-street Parking Commission; and H. Glee Jenkins, Chairman, Waukegan Planning Commission.



## EXECUTIVE COMMITTEE MEETS

The Executive Committee of the Society consisting of President C. W. Klassen, chairman, Vice-President D. M. Wallace, Secretary A. D. Spicer, and National Director George DeMent met in Peoria on Saturday, May 22, last.

The Committee approved minor changes in the Ladies Auxiliary constitution of the Central Illinois and Champaign County Chapters. They also decided that the report of the Co-exploratory Committee was to be published in the October issue of the ILLINOIS ENGINEER. This report is the result of a year's study and will recommend certain changes in society procedures. A ballot concerning these changes will be presented to the membership immediately after the publication of the report. H. F. Sommerschild, member of the committee, was also in attendance in Peoria.

## CHICAGO CHAPTER HEARS TALK ON PORT AUTHORITY

(Reported by ALLEN DRACHMAN)

Martin W. Oettershegan, Port Manager of the City of Chicago, spoke before the Chicago Chapter on April 8th on the Chicago Port Authority.

The Chicago Port Authority river tonnage last year was 18½ million tons. The amount of tonnage carried by the river was substantially restricted by the narrowness of the Calumet Sag Canal. The Chicago Port Authority has been organized following its authorization by the State of Illinois and it is under the jurisdiction of Mr. V. E. Gunlock, Public Works Administrator of the City of Chicago.

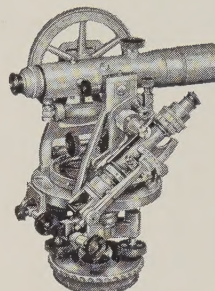
The waterways and harbor planning for the city has been rather neglected until recent times. The Corps of Engineers of the U. S. Army has in the past been the port authority for many of the cities and metropolitan areas throughout the country. They have generally done a splendid job in planning waterways and ports.

In Chicago, even though the sanitary district has spent many millions of dollars of work on the Chicago River which has been of some value in developing the river as a water highway, it has not always had the proper prospective for developing it to the fullest extent. The Chicago Regional Planning Commission and the Chicago Association of Commerce have done long-range planning but there again the river and port planning has not been given the full emphasis required. Chicago began and developed as a private port but it has grown so fast that the port facilities have not kept the pace with the city's development. The Calumet Sag Channel, which is now 60 feet wide, needs to be increased in width up to 225 feet because of the fact that barges coming up river in barge tows totaling 10,000 tons have to be broken down into tows of 1,000 or 2,000 tons maximum on reaching the Sag Channel. The 4 million tons per year which have been carried on the Sag Channel would increase to a very conservative estimate of 18 million tons with these improvements.

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## JUST A REMINDER

If you have not yet paid your 1954 dues this is the last issue of the ILLINOIS ENGINEER you will receive. This is in accordance with a rule established by the Society's Board of Direction.

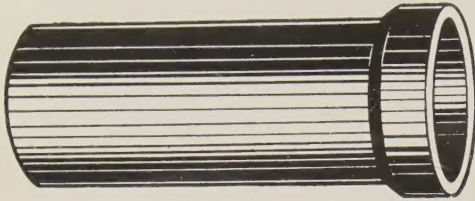
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The Chicago Port must also look eastward to envision the effect on its commerce of the development of the St. Lawrence Seaway. Last year 196 ships came into Chicago through the St. Lawrence River but, of course, they were limited in length to 250 feet, to a draft of 15 feet, and to a beam 44 feet. The St. Lawrence Seaway project will eventually be put through even if Canada has to do it on its own. The United States Congress has delayed action on it for many years to the aggravation of Canada which proposes to go ahead with the work on their own. It may well result that the United States will end as a customer of Canada in the use of the Seaway.

Ships are now being planned and built which carry 7,000 to 8,000 tons of cargo with 24 feet of draft and 450 to 500 feet of beam of length which will in the future be able to come through the St. Lawrence Seaway to Chicago and from Chicago be able to return to any of the world's ports of any consequence. It is estimated that in the first 10 years 10 million tons shipping will come through the St. Lawrence Seaway when it is completed to the Chicago area.



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### C. O. KARCH PRESENTS EARLY EDITION OF ENGINEERING TEXT TO WEST POINT

Through the generosity of Charles O. Karch, member I. S. P. E., civil engineer with the Kansas City office of the Panhandle-Eastern Pipe Line Company, the library of the United States Military Academy at West Point has been able to complete a valuable collection of "Davies Elements of Survey," a text book originally prepared for West Point in 1835.

Mr. Karch found a 2nd edition of Davies, rewritten in 1839, among several books he had acquired at a bookstand during a visit to Chicago. Later, at a meeting of the Kansas City Chapter of the Society of American Military Engineers, Mr. Karch displayed the book which was in excellent state of preservation, with all type, tables, and plates clearly legible. One of the members of the Society who became interested in the rare book was Colonel Keith R. Barney, Kansas City District Engineer of the Corps of Engineers. Colonel Barney took the book to his office for further reading and later contacted the librarian at West Point, acquainting him with the circumstances.

In a return memo, the librarian, Colonel W. J. Morton, informed Colonel Barney that the library was in possession of the first, third, and fourth editions of Davies, and had been looking for the second edition, which was the one possessed by Mr. Karch. Mr. Karch then decided to contribute the book to West Point where

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it now has taken its place alongside the other editions of "Davies Elements of Survey."

Mr. Karch is vice-president of the Kansas City Chapter, American Society of Military Engineers; a member of the National Society of Professional Engineers; a member of the Missouri and the Illinois Societies of Professional Engineers; and a member of the Engineers Club of Kansas City.

### CIVIL DEFENSE IN SPRINGFIELD

(From *Capital Chapter Chatter*)

Members of Springfield's Civil Defense Team under the leadership of chapter engineers are demonstrating worthwhile activity to the State Defense organization. "Walt" Marquardt is director of the Engineering Section; Carl Thunman is director of the Public Works Division; and "Claud" Morrisett, chapter chairman of Civil Defense, is heading up the study of shelter areas. Morrisett's team currently is winding up a comprehensive survey under able captain guidance of Capital men: Team No. 1—Captain, N. A. Nelson; Team No. 2—Captain, G. A. Rehn; Team No. 3—Captain, H. J. Fernandes; Team No. 4—Captain, C. E. Thunman, Jr.; Team No. 5—Captain, L. E. Stickler.

Other Capital men serving on the teams are: L. H. Hendrick, E. J. Raich, C. Passialis, W. N. Sommer, and W. H. Jollie.



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—S. RONALD HALL

It is not only necessary to have faith in a good cause, we must also make investments in it.

I hold every man a debtor to his profession; from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves by way of amends to be a help and ornament thereunto.

Sir Francis Bacon



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*If placed in a position as a result of an Engineers Available or Position Available advertisement, applicants agree to pay the established placement fee. These rates are available on request and are sufficient to maintain an effective non-profit personnel service. A weekly bulletin of positions open is available to subscribers. Apply E.S.P.S., Chicago.*

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**Purchasing.** 35. Thirteen yrs. purchasing material, inventory control, expediting and set up numbering system for identification of materials. \$4500. Chicago. 880-PE

**Chemical Engr.** Chem. Engr. 45. Eight yrs. doing research, development of new chemicals thru pilot and production plant. Training and supv. personnel, materials handling, plant layout, design and corrosion studies. Eight yrs. sr. chemist on catalyst plant. \$6500. Midwest. 881-PE

**Chem. Engr.** M.S. Tex. Chem. 47. Nineteen yrs. doing calculation of requirements, specifications, tests, developing, evaluation, trouble shooting, and production accounting in textiles and electronic fields. \$7200. Chicago. 882-PE

**Methods.** 26. Six yrs. methods, time study, layout, estimating, processing, labor relations, standard data, and indirect labor routines. \$5200. Chicago. 883-PE

**Time Study.** B.A. 28. Recently completed time and motion study course at Northwestern. No actual exp. Previous exp. approx. three yrs. in accounting. Both public and private. \$350. Chicago. 884-PE

**Sales Mgr.** 55. Thirty yrs. sales and engrg. of heavy hydraulic metal working equip., mechanical and electrical equipment and design supervision of construction and operation. \$12,000. Chicago. 885-PE

**Sales Engr.** Met. Engr. 26. Seventeen mos. calling on top-level executives to sell communication equip., handled inventory as part of training program and contacts with gov't. and company research depts. \$4200. Midwest. 886-PE

**Metallurgist.** Met. Engr. 28. Eleven yrs. prescribe and control heat treat of component parts, supv. lab., investigate difficulties in production, chemical analysis, evaluate incoming materials. \$6000. South and West. 887-PE

**Constr. Supt.** 52. Eight yrs. Complete charge of mining and milling operations and processing asbestos. Three yrs. preventive measures in fire control. \$5000. U.S. 888-PE

**Contract Engrg.** M.E. 57. Twenty-two yrs. staff engr. doing field engrg. special reports, investigations, sales programs and general staff work. Wide acquaintance in pet. industry. \$7800. Midwest. 889-PE

**Personnel.** A.M. 26. Twenty-five mos. recruitment, maintenance and administration of personnel force. Promote good human relations in dept. \$4500. Midwest. 890-PE

### POSITIONS AVAILABLE

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**Sales Engr.** (trainee). M.E. or E.E. preferred but not absolutely necessary. Age: 25-30. 1 plus yrs. exp. in controls or regulators field, air conditioning, heating, pumps, air refrigeration, etc. Willing to locate anywhere in U.S. Duties: Applicant will take 10-week training course offered by company leading to sales engineering position in one of company's branch offices. For a manufacturer of electric and automatic controls. Start \$325 to \$450. Emp. will pay fee. Traveling. Car furnished by company. Loc.: U.S. C-1852

**Furnace Designer.** M.E. or Met. Eng. Age: 35-45. 8 plus yrs. exp. in layout and design of industrial furnaces for heat treating, annealing or similar purposes. Knowledge of refractories, controls and conveyors. Duties: design and development of industrial furnaces. Practically all custom built. For a manufacturer of furnaces. Sal.: \$7000 to \$9000. Employer will pay fee. Loc.: Chicago. C-1877

**Planning Engineer.** Age: 32-50. 10 plus yrs. exp. in solid machine shop background on precision metal cutting machinery. Knowledge of mechanical power transmission helpful. Duties: laying out all machinery and heat treating equipment, selection of machine tools, design tooling whenever needed and estimate time and cost of mfg. For a mfg. of gears. Sal.: \$10,000-\$15000 per yr. Employer will neg. fee. Location: Chicago. C-1880

**Metallurgical Teacher.** Ph.D., Met. Eng. or Met. Must be strong in theoretical and physics sides. Duties: teach both graduate and undergraduate classes in metallurgical theory, physics, etc. Will also do considerable res. work. For a university. Salary: Open. Location: Chicago. C-1883

**Methods Engr.** 3 plus yrs. in processing and working with very close tolerance metal working on precision products. Knowledge of close tolerance machine shop operations. Duties: supv. inspecting, taking time studies and maintaining routing records. Conduct job analyses for better methods and other methods studies. For a mfg. of precision products. Salary: \$400-\$500 per mo. Employer will negotiate fee. Location: N. Chicago suburb. C-1886(a)

**Process Engr.** 3 plus yrs. exp. in supb. tool design and processing and use of hand and automatic screw machines, cylindrical O.D. and I.D. grinders, surface grinders, milling and drilling machines. Duties: evaluate each part assembly from print and establish most economical process layout to equipment available and to very close tolerances. Determine tool and machine troubles and overcome them. Evaluate mfg. costs. For a mfg. of precision products. Salary: \$650. Empl. will neg. fee. Location: Northern Chicago suburb. C-1886(b)

**Metallurgical Engr.** Met. Eng. 2 plus yrs. exp. in physical metallurgy, material specifications, failure investigations, metallography or material testing. Duties: those covering above requirements for exp. For a manufacturer. Sal.: Open. Location: Pa. C-1887(a)

**Research and Development.** Grad. E.E. Age: 23 to 35. 5 plus yrs. exp. in electronic development and design. Duties: should have ability to take project and carry to completion. Ability to supervise others. Know electrical and electronic components. Salary: \$6000 to \$8000. Employer will pay fee. Location: Chicago. C-1888